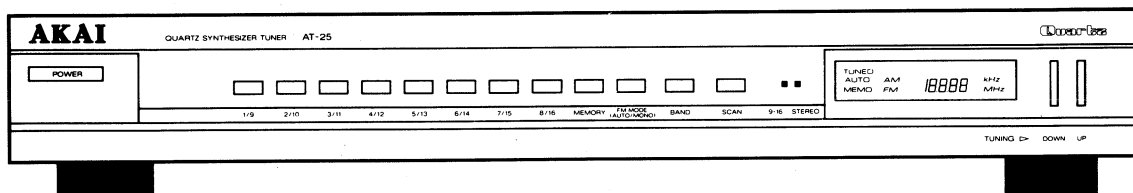


AKAI SERVICE MANUAL



QUARTS SYNTHESIZER TUNER

MODEL AT-25/L

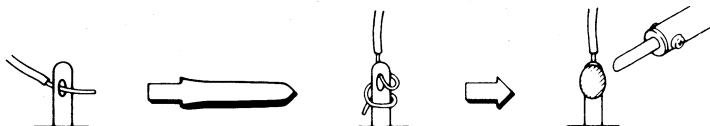
SPECIFICATIONS

<p>FM Tuner section Tuning frequency range .. 87.5 MHz to 108.0 MHz Usable sensitivity (300 ohms) 18 dBf Quieting sensitivity (S/N=50 dB) 21 dBf (Mono)/42 dBf (Stereo) Capture ratio 2.0 dB Selectivity 65 dB Image rejection 45 dB IF rejection 75 dB Spurious rejection 80 dB AM suppression 53dB S/N (IHF) 70 dB (Mono)/65 dB (Stereo) T.H.D 0.2 % (Mono)/0.5 dB (Stereo) Stereo separation (1kHz) . 35 dB</p> <p>AM tuner section (MW & LW for AT-25/L) (MW for AT-25/L) Tuning frequency range ... 531 kHz to 1,602 kHz Usable sensitivity 400 μV/m Selectivity 35 dB Image rejection 30 dB IF rejection 45 dB S/N 30 dB T.H.D 0.8 %</p>	<p>(LW for AT-25L) Tuning frequency range ... 141 kHz to 351 kHz Usable sensitivity 800 μV/m Selectivity 30 dB Image rejection 30 dB IF rejection 30 dB S/N 30 dB T.H.D 1.8 % Power requirements 220 V, 50 Hz for Europe except UK. 240 V, 50 Hz for UK and Australia 110 V-120 V/220 V-240 V, convertible for other countries. Dimensions 425(W)\times70(H)\times235(D)mm Weight 1.9 kg (4.2 lbs)</p> <p>Standard accessories</p> <table> <tr> <td>FM di-pole antenna</td> <td>1</td> </tr> <tr> <td>FM antenna plug</td> <td>1</td> </tr> <tr> <td>AM loop antenna</td> <td>1</td> </tr> <tr> <td>Operator's manual</td> <td>1</td> </tr> <tr> <td>Pin plug cord</td> <td>1</td> </tr> </table>	FM di-pole antenna	1	FM antenna plug	1	AM loop antenna	1	Operator's manual	1	Pin plug cord	1
FM di-pole antenna	1										
FM antenna plug	1										
AM loop antenna	1										
Operator's manual	1										
Pin plug cord	1										

*For improvement purposes, specifications and design are subject to change without notice.

PRECAUTIONS DURING SERVICING

1. Parts identified by the Δ (*) symbol parts are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
 - 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
 - 1) Insulation tape
 - 2) PVC tubing
 - 3) Spacers (Insulating Barriers)
 - 4) Insulation sheets for transistors
 - 5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).

7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.

The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal-input/output connectors, etc.) and the earth ground through a resistor of 1500 ohms paralleled with a 0.15 μ F capacitor, under the unit's normal working conditions. The leakage-current should be less than 0.5 mA rms AC.

The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 Mohms.

★ INFORMATION

SYMBOLS FOR PRIMARY DESTINATION

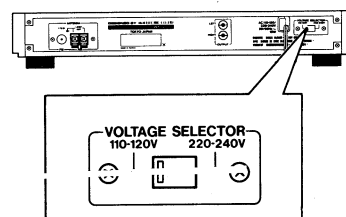
Alphabet indicates the destination of the units as listed below.

Symbols	Principal Destinations
A	USA
B	UK
C	Canada
E	Europe (except UK)
J	Japan
S	Australia
V	N. Germany
U	Universal Area
Y*	Custom version

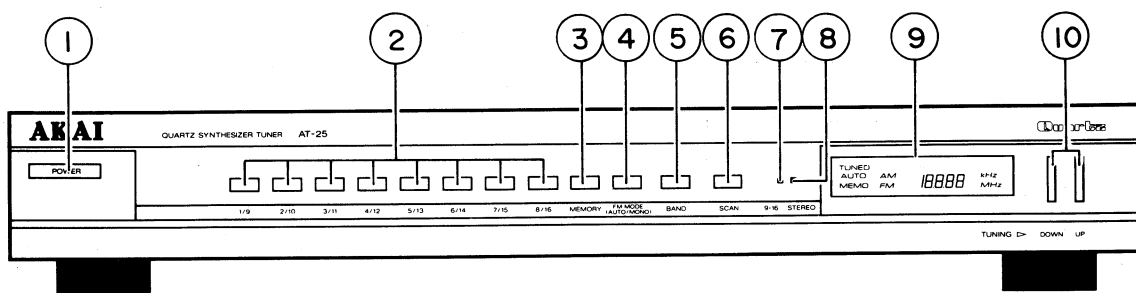
VOLTAGE CONVERSION

(U Model only)

Before connecting the power cord. Set the VOLTAGE SELECTOR located on the rear panel with a screwdriver so that the correct voltage is indicated.



I. CONTROLS



- 1 POWER button**
To turn the power on and off
- 2 Preset Station Buttons (1 to 16)**
To memorize preset stations and tune in memorized stations.
- 3 MEMORY button**
To memorize preset stations. Press the button once to preset station numbers 1 to 8. Press the button twice to preset station numbers 9 to 16.
- 4 FM MODE button**
To select the FM AUTO or monoaural mode.
- 5 BAND button**
To select the band.
- 6 SCAN Button**
To select the scanning mode of the tuner.
- 7 9~16 CH Indicator**
Tells you the preset station number is 9 to 16.
- 8 STEREO Indicator**
Tells you the received FM broadcast program is in the stereo mode.
- 9 FL (Fluorescent) Display**
Shows tuning information.
- 10 TUNING Control button (UP/ DOWN)**
To tune in a station manually.

II. DISASSEMBLY

1. Removal of UPPER COVER

Remove two screws and remove the UPPER COVER.

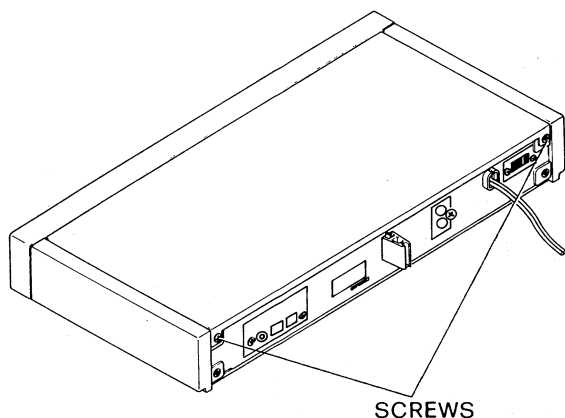


Fig. 2-1

2. Removal of FRONT PANEL.

Release the stoppers as shown Fig. 2-2 and the front panel.

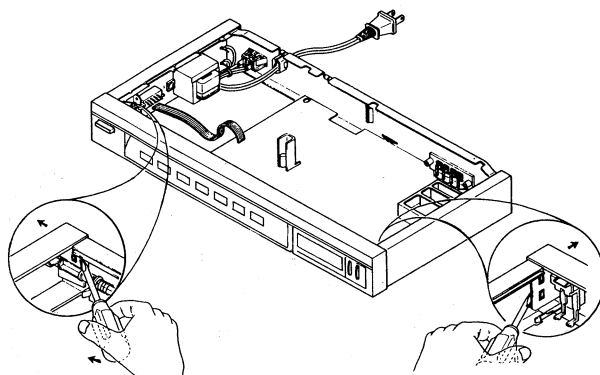


Fig. 2-2

III. PRINCIPAL PARTS LOCATION

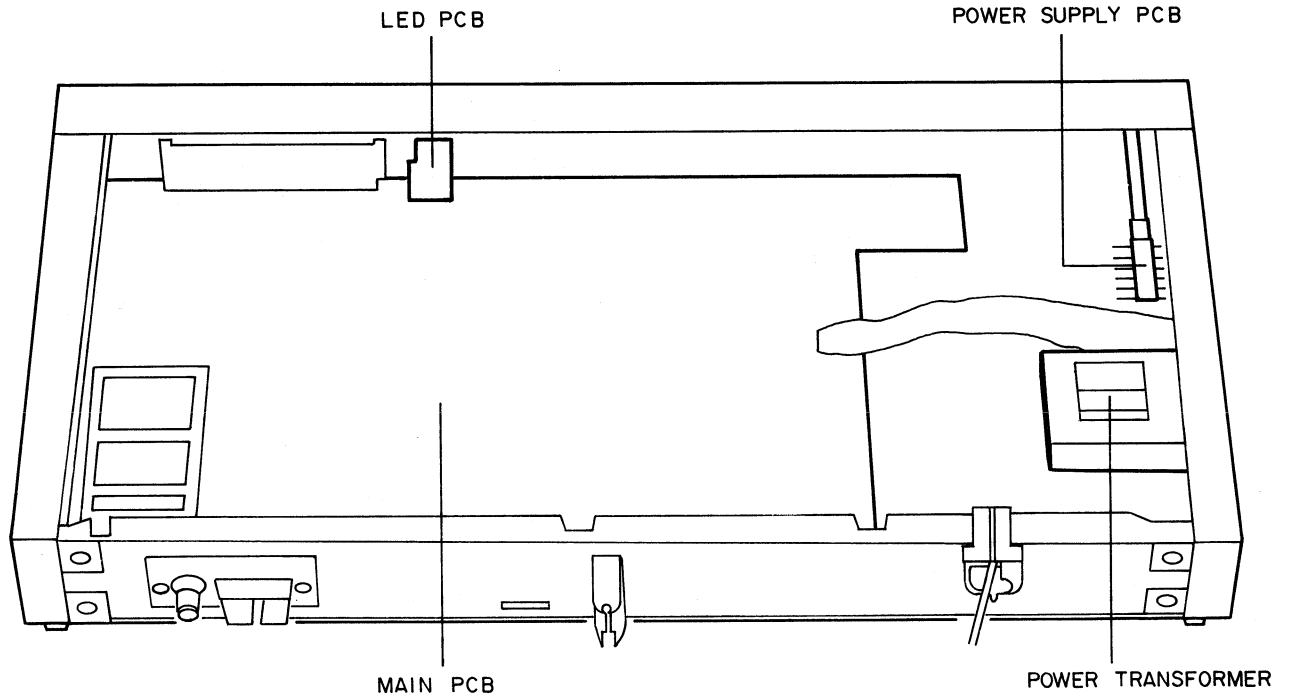


Fig. 3-1

IV. ELECTRICAL ADJUSTMENT

4-1 INSTRUMENT CONNECTIONS

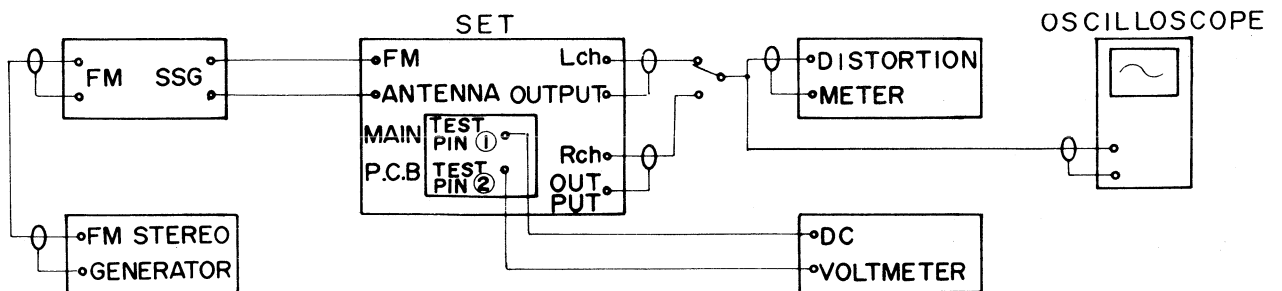


Fig. 4-1 Instruments connection of FM adjustment

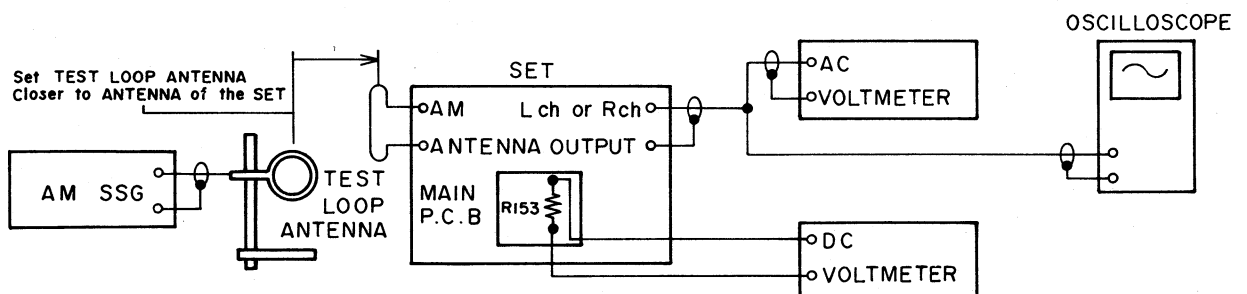


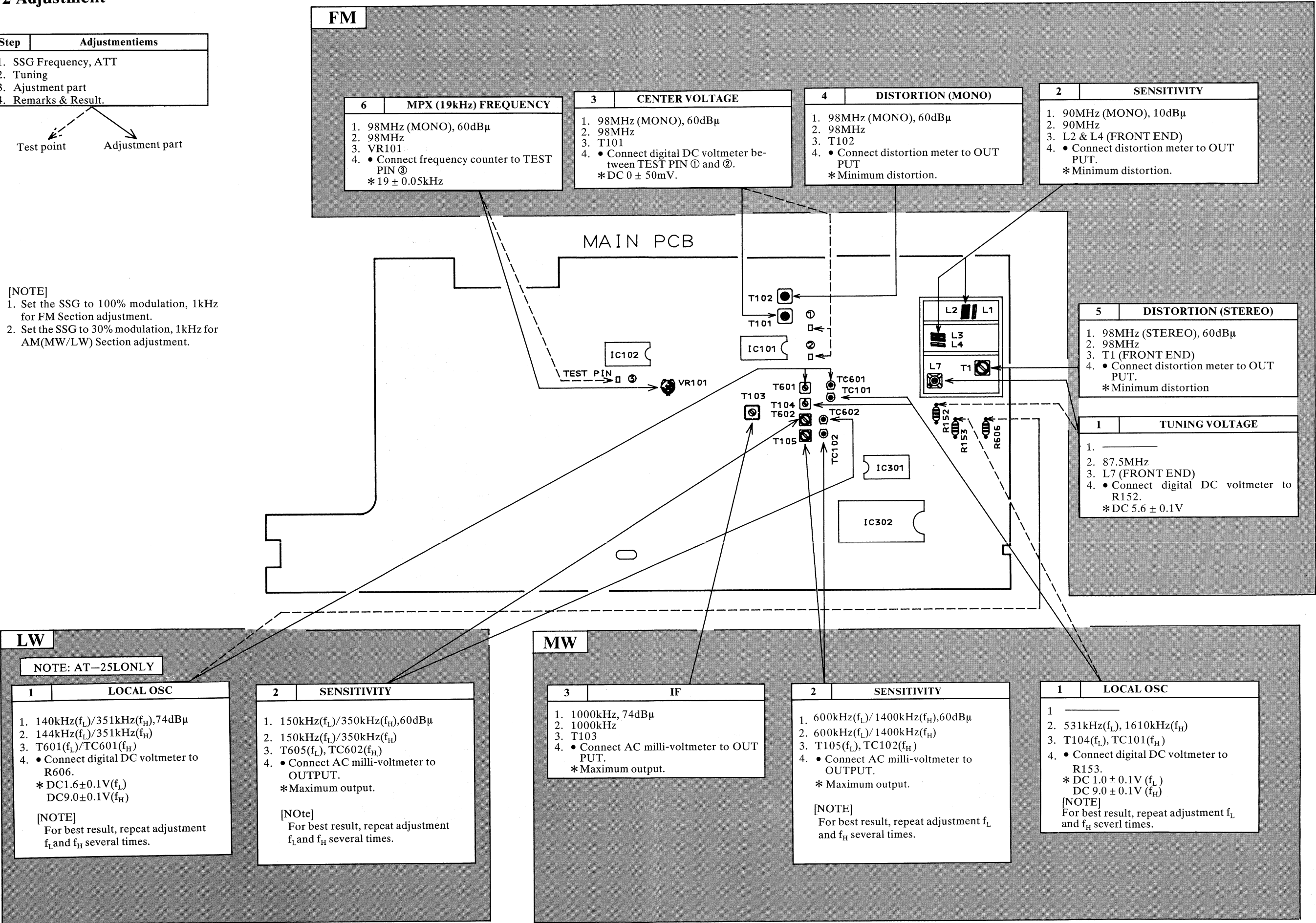
Fig. 4-2 Instruments connection of AM adjustment

4-2 Adjustment

Step	Adjustment items
1.	SSG Frequency, ATT
2.	Tuning
3.	Adjustment part
4.	Remarks & Result.

Test point Adjustment part

[NOTE]
1. Set the SSG to 100% modulation, 1kHz for FM Section adjustment.
2. Set the SSG to 30% modulation, 1kHz for AM(MW/LW) Section adjustment.



V. PARTS LIST

ATTENTION

- 1. When placing an order for parts, be sure to list Part No., Model No. and the description of eachpart. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
- 2. Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.
- 3. Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

- 1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
- 2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
- 3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
- 4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20×03STL CMT
4	ZS-536488	BID20×08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individual parts index number in that figure.

b) PC Board

6. MAIN PC BOARD

REF. NO.	PART NO.	DESCRIPTION
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination

[A] : AAL (U.S.A) [S] : SAA (Australia)

[B] : BEAB (England) [U] : U/T (Universa Area)

[C] : CSA (Canada)

[E] : CEE (Europe) [V] : VDE (W. Germany)

[J] : JPN (Janan) [Y] : Custom Version

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

- 5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

WARNING

△(*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

△(*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description
1	*BT-720611	TRANS POW AT-A305L (B,S)
2	*BT-727143T	TRANS POW AT-A335(U)
3	*BT-720610	TRANS POW PZ-J215A AT-A305L (E)
4	ED-720614	D LED SE-24101DS RED
5	ED-720615	D LED SE-24121DS GREEN
6	ED-327057	D SILICON H DS442X
7	*ED-704267	D SILICON 10E1
8	ED-720622	D VARACTOR KV1236Z
9	*ED-200969	D ZENER H RD3.0E B2
10	*ED-700265	D ZENER H RD6.2E B2
11	*ED-727509J	D ZENER RD5.1E B3
12	EH-727145T	FILTER
13	EH-726732J	FILTER CE
14	EH-344434	FILTER CE BFU450C4N 0.450MHZ
15	EH-725491T	FILTER CE CF450BL
16	EH-726708T	FILTER CE CSB400P
17	EI-358818	IC A3048-714 AKAI COSTOM
18	EI-361624	IC LA1265
19	EI-361622	IC LM7001
20	EI-720623	IC UPC587C2
21	*EI-328796	IC UPC78M12H
22	EI-344422	OSC X'TAL HC-18/U 7.200MHZ
23	EM-720613	IND FL 8-BT-61Z AT-305/L
24	EO-720633	TRANS IF 27MH 62P QU-7
25	EO-720634	TRANS IF 82P QU-7
26	ES-727144T	SW PUSH SPUF12AA55-CL
27	ES-726684T	[U] [POWER SW]
28	ES-720639	SW TACT SKHHLH1520-CL
29	ET-308472	TR 2SA1115 E,F,G F05
30	ET-308141	TR 2SC2603 G F05
31	ET-360137	TR 2SC3330 U,V F05
32	ET-704002	TR 2SC710 D
33	*ET-208012	TR 2SD571 K

2. P.C BOARD BLOCK

Ref. No.	Part No.	Description
1A	BA-729368T	PC MAIN BLK AT-25 (V)
1B	BA-729369T	PC MAIN BLK AT-25 (E)
1C	BA-729371T	PC MAIN BLK AT-25 (B,S)
1D	BA-729373T	PC MAIN BLK AT-25 (U)
1E	BA-729370T	PC MAIN BLK AT-25L(E)
1F	BA-729372T	PC MAIN BLK AT-25L(B,S)
2A	BA-F0131A010A	PC FRONTENDBLKFE31(U,C,A,S,E,B)
2B	BA-F0141A010B	PC FRONT END BLK FE41(V)

3. TUNER P.C BOARD

Ref. No.	Part No.	Description
D101	ED-720622	D VARACTOR KV1236Z
D102	ED-720622	D VARACTOR KV1236Z
D103	ED-327057	D SILICON H DS442X
D104	ED-327057	D SILICON H DS442X
D105	ED-327057	D SILICON H DS442X
D106	ED-327057	D SILICON H DS442X
D107	ED-327057	D SILICON H DS442X
D108	ED-327057	D SILICON H DS442X
D301	ED-327057	D SILICON H DS442X
D302	ED-327057	D SILICON H DS442X
D303	ED-327057	D SILICON H DS442X
D304	ED-327057	D SILICON H DS442X
D307	ED-327057	D SILICON H DS442X
D309	ED-327057	D SILICON H DS442X
D501	*ED-704267	D SILICON 10E1
D502	*ED-704267	D SILICON 10E1
D503	*ED-704267	D SILICON 10E1
D504	ED-327057	D SILICON H DS442X
D505	*ED-700265	D ZENER H RD6.2E B2
D506	ED-327057	D SILICON H DS442X
D507	*ED-200969	D ZENER H RD3.0E B2
D508	*ED-200969	D ZENER H RD3.0E B2
D509	ET-308141	TR 2SC2603 G F05
D510	ET-308141	TR 2SC2603 G F05
D512	*ED-727509J	D ZENER RD5.1E B3
D513	ED-327057	D SILICON H DS442X
D514	ED-327057	D SILICON H DS442X
D601	ED-720622	D VARACTOR KV1236Z [L ONLY]
D602	ED-720622	D VARACTOR KV1236Z [L ONLY]
D603	ED-327057	D SILICON H DS442X [L ONLY]
D604	ED-327057	D SILICON H DS442X [L ONLY]
D802	ED-327057	D SILICON H DS442X
FL101	EH-726732J	FILTER CE
FL102	EH-726732J	FILTER CE
FL103	EH-344434	FILTER CE BFU450C4N 0.450MHZ
FL104	EH-725491T	FILTER CE CF450BL
FL901	EH-727145T	FILTER [V]
IC101	EI-361624	IC LA1265
IC102	EI-720623	IC UPC587C2
IC301	EI-361622	IC LM7001
IC302	EI-358818	IC A3048-714 AKAI COSTOM
IC501	*EI-328796	IC UPC78M12H
R311	EH-720616	COMP R 1/8W 104JX8
R312	EH-720618	COMP R 1/8W 104JX5
R502	*ER-488024	R OMF H FS 1W 330J
R503	*ER-351221	R OMF H S15 FS 1W 221J
R504	*ER-321619	R OMF H S15 FS 1W 101J
R507	*ER-359738	R OMF H S15 FS 1W 151J
S1	ES-720639	SW TACT SKHHLH1520-CL
S2	ES-720639	SW TACT SKHHLH1520-CL
S3	ES-720639	SW TACT SKHHLH1520-CL
S4	ES-720639	SW TACT SKHHLH1520-CL
S5	ES-720639	SW TACT SKHHLH1520-CL
S6	ES-720639	SW TACT SKHHLH1520-CL
S7	ES-720639	SW TACT SKHHLH1520-CL
S8	ES-720639	SW TACT SKHHLH1520-CL
S9	ES-720639	SW TACT SKHHLH1520-CL
S10	ES-720639	SW TACT SKHHLH1520-CL
S11	ES-720639	SW TACT SKHHLH1520-CL
S12	ES-720639	SW TACT SKHHLH1520-CL
S13	ES-720639	SW TACT SKHHLH1520-CL
S14	ES-720639	SW TACT SKHHLH1520-CL
TR101	ET-704002	TR 2SC710 D
TR102	ET-308472	TR 2SA1115 E,F,G F05
TR103	ET-360137	TR 2SC3330 U,V F05
TR104	ET-360137	TR 2SC3330 U,V F05
TR105	ET-360137	TR 2SC3330 U,V F05
TR106	ET-308472	TR 2SA1115 E,F,G F05
TR107	ET-360137	TR 2SC3330 U,V F05
TR108	ET-360137	TR 2SC3330 U,V F05
TR109	ET-360137	TR 2SC3330 U,V F05

Ref. No.	Part No.	Description
TR110	ET-360137	TR 2SC3330 U,V F05
TR111	ET-360137	TR 2SC3330 U,V F05
TR112	ET-308472	TR 2SA1115 E,F,G F05
TR113	ET-308472	TR 2SA1115 E,F,G F05
TR301	ET-360137	TR 2SC3330 U,V F05
TR501	*ET-208012	TR 2SD571 K
TR502	ET-308472	TR 2SA1115 E,F,G F05
TR601	ET-308472	TR 2SA1115 E,F,G F05 [L ONLY]
TR602	ET-360137	TR 2SC3330 U,V F05 [L ONLY]
TR603	ET-308472	TR 2SA1115 E,F,G F05 [L ONLY]
TR604	ET-360137	TR 2SC3330 U,V F05 [L ONLY]
TR605	ET-360137	TR 2SC3330 U,V F05 [L ONLY]
TR606	ET-308141	TR 2SC2603 G F05 [L ONLY]
TR901	ET-308141	TR 2SC2603 G F05
T101	EO-720633	TRANS IF 27MH 62P QU-7
T102	EO-720634	TRANS IF 82P QU-7
T103	EO-720635	TRANS IF 180P P-7SB
T104	EO-720636	COIL OSC 140MH P-7GB
T105	EO-715259	COIL-ANT 25A-1165-08
T601	EO-720640	COIL OSC 560MH P-7SB [L ONLY]
T602	EO-720642	COIL ANTENA (LW) [L ONLY]
TC101	EC-720638	C S-FIX H 30N750 GRN
TC102	EC-720638	C S-FIX H 30N750 GRN
TC601	EC-720638	C S-FIX H 30N750 GRN [L ONLY]
TC602	EC-720638	C S-FIX H 30N750 GRN [L ONLY]
VR101	EV-371281	R S-FIX H VM6CKPVB 0.30W 502
X301	EI-344422	OSC X'TAL HC-18/U 7.200MHZ
X302	EH-726708T	FILTER CE CSB400P

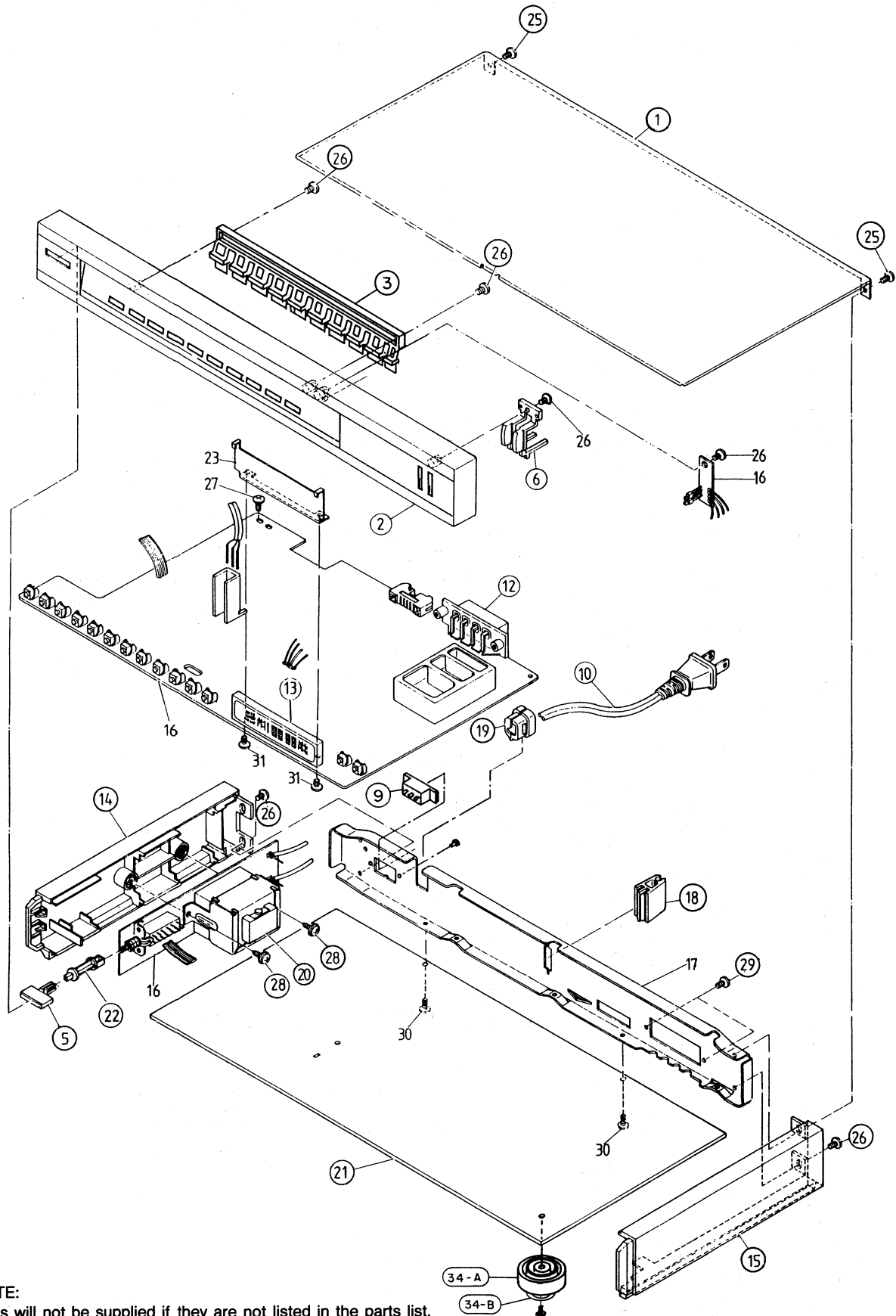
4. LED P.C BOARD

Ref. No.	Part No.	Description
D110	ED-720614	D LED SE-24101DS RED [STEREO]
D306	ED-720615	D LED SE-24121DS GREEN [9-16CH]

5. POWER SUPPLY P.C BOARD

Ref. No.	Part No.	Description
SW15A	ES-727144T	SW PUSH SPUF12AA55-CL [U] [POWER SW]
SW15B	ES-726684T	SW PUSH SW15 [E,V,B,S] [POWER SW]

FINAL ASSEMBLY BLOCK



NOTE:

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

PARTS LIST

6. JACK P.C BOARD

Ref. No.	Part No.	Description
JM1	EJ-725461T	PIN J 2P

7. FINAL ASSEMBLY BLOCK

Ref. No.	Part No.	Description
1	SP-726662T	CASE
2A	BD-729366T	PANEL FRONT BLK AT-25
2B	BD-729367T	PANEL FRONT BLK AT-25L
3	SK-729430T	KNOB PRESET
5	SK-720593	KNOB POWER
6	SK-729431T	KNOB TUNING
9	*ES-725477T	SW SLIDE [U]
10A	*EW-374894	AC CORD 2C VM-0129A,VFF U/T [U]
10B	*EW-347897	AC CORD 2 CORES VM0364,LCFL EV [E,V]
10C	*EW-727063T	AC CORD BS6500 (B) [B]
10D	*EW-347898	AC CORD 2 CORES VM-0436,LCFL S [S]
12	EJ-359031	TERMINAL LEVER YKD31-0215 P 2P
13	EM-720613	IND FL 8-BT-61Z AT-305/L [IN 301]
14	SP-726661T	COVER-L
15	SP-726660T	COVER-R
18	SZ-726645T	HOLDER ANT
19	*EZ-371605	BUSH CORD 2271
20A	*BT-727143T	TRANS POW AT-A335(U) [U]
20B	*BT-720610	TRANS POW PZ-J215A AT-A305L (E) [E,V]
20C	*BT-720611	TRANS POW AT-A305L (B,S) [B,S]
21	SP-726663T1	CASE-BOTTOM
22	MZ-720657	JOINT POWER
25	ZS-331532	PT BID30X08STL BNI
26	ZS-331532	PT BID30X08STL BNI
28	ZS-726670T	SCREW-METAL 3X10
29	ZS-331532	PT BID30X08STL BNI
34-A	SA-729420T	LEG AM-25
34-B	SA-729419T	CUSHION LEG

8. ACCESSARY

Ref. No.	Part No.	Description
1	EE-359265	ANT LOOP LA-200A-A
2	EE-315329	ANT DIPOLE SAE-010
3	EJ-352118	SOCKET COAX PAL B2-714P-900
4	EW-728318T	CORD PIN-PIN/2P

INDEX

Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
BA-729368T	2-1A	EI-358818	3-IC302	EW-728318T	8-4		
BA-729369T	2-1B	EI-361622	1-19	EZ-371605	7-19		
BA-729370T	2-1E	EI-361622	3-IC301	MZ-720657	7-22		
BA-729371T	2-1C	EI-361624	1-18	SA-729419T	7-34-B		
BA-729372T	2-1F	EI-361624	3-IC101	SA-729420T	7-34-A		
BA-729373T	2-1D	EI-720623	1-20	SK-720593	7-5		
BA-F0131A010A	2-2A	EI-720623	3-IC102	SK-729430T	7-3		
BA-F0141A010B	2-2B	EJ-352118	8-3	SK-729431T	7-6		
BD-729366T	7-2A	EJ-359031	7-12	SP-726660T	7-15		
BD-729367T	7-2B	EJ-725461T	6-JM1	SP-726661T	7-14		
BT-720610	1-3	EM-720613	1-23	SP-726662T	7-1		
BT-720610	7-20B	EM-720613	7-13	SP-726663T1	7-21		
BT-720611	1-1	EO-715259	3-T105	SZ-726645T	7-18		
BT-720611	7-20C	EO-720633	1-24	ZS-331532	7-25		
BT-727143T	1-2	EO-720633	3-T101	ZS-331532	7-26		
BT-727143T	7-20A	EO-720634	1-25	ZS-331532	7-29		
EC-720638	3-TC101	EO-720634	3-T102	ZS-726670T	7-28		
EC-720638	3-TC102	EO-720635	3-T103				
EC-720638	3-TC601	EO-720636	3-T104				
EC-720638	3-TC602	EO-720640	3-T601				
ED-200969	1-9	EO-720642	3-T602				
ED-200969	3-D507	ER-321619	3-R504				
ED-200969	3-D508	ER-351221	3-R503				
ED-327057	1-6	ER-359738	3-R507				
ED-327057	3-D103	ER-488024	3-R502				
ED-327057	3-D104	ES-720639	1-28				
ED-327057	3-D105	ES-720639	3-S1				
ED-327057	3-D106	ES-720639	3-S2				
ED-327057	3-D107	ES-720639	3-S3				
ED-327057	3-D108	ES-720639	3-S4				
ED-327057	3-D301	ES-720639	3-S5				
ED-327057	3-D302	ES-720639	3-S6				
ED-327057	3-D303	ES-720639	3-S7				
ED-327057	3-D304	ES-720639	3-S8				
ED-327057	3-D307	ES-720639	3-S9				
ED-327057	3-D309	ES-720639	3-S10				
ED-327057	3-D504	ES-720639	3-S11				
ED-327057	3-D506	ES-720639	3-S12				
ED-327057	3-D513	ES-720639	3-S13				
ED-327057	3-D514	ES-720639	3-S14				
ED-327057	3-D603	ES-725477T	7-9				
ED-327057	3-D604	ES-726684T	1-27				
ED-327057	3-D802	ES-726684T	5-SW15B				
ED-700265	1-10	ES-727144T	1-26				
ED-700265	3-D505	ES-727144T	5-SW15A				
ED-704267	1-7	ET-208012	1-33				
ED-704267	3-D501	ET-208012	3-TR501				
ED-704267	3-D502	ET-308141	1-30				
ED-704267	3-D503	ET-308141	3-D509				
ED-720614	1-4	ET-308141	3-D510				
ED-720614	4-D110	ET-308141	3-TR606				
ED-720615	1-5	ET-308141	3-TR901				
ED-720615	4-D306	ET-308472	1-29				
ED-720622	1-8	ET-308472	3-TR102				
ED-720622	3-D101	ET-308472	3-TR106				
ED-720622	3-D102	ET-308472	3-TR112				
ED-720622	3-D601	ET-308472	3-TR113				
ED-720622	3-D602	ET-308472	3-TR502				
ED-727509J	1-11	ET-308472	3-TR601				
ED-727509J	3-D512	ET-308472	3-TR603				
EE-315329	8-2	ET-360137	1-31				
EE-359265	8-1	ET-360137	3-TR103				
EH-344434	1-14	ET-360137	3-TR104				
EH-344434	3-FL103	ET-360137	3-TR105				
EH-720616	3-R311	ET-360137	3-TR107				
EH-720618	3-R312	ET-360137	3-TR108				
EH-725491T	1-15	ET-360137	3-TR109				
EH-725491T	3-FL104	ET-360137	3-TR110				
EH-726708T	1-16	ET-360137	3-TR111				
EH-726708T	3-X302	ET-360137	3-TR301				
EH-726732J	1-13	ET-360137	3-TR602				
EH-726732J	3-FL101	ET-360137	3-TR604				
EH-726732J	3-FL102	ET-360137	3-TR605				
EH-727145T	1-12	ET-704002	1-32				
EH-727145T	3-FL901	ET-704002	3-TR101				
EI-328796	1-21	EV-371281	3-VR101				
EI-328796	3-IC501	EW-347897	7-10B				
EI-344422	1-22	EW-347898	7-10D				
EI-344422	3-X301	EW-374894	7-10A				
EI-358818	1-17	EW-727063T	7-10C				

ABBREVIATIONS

Abbreviation	Description	Abbreviation	Description
ACC	Automatic Color level Control	IR	Infra Red
AFC	Automatic Frequency Control	IRE	Image Ratio Efficiency
AFT	Automatic Frequency Tuning	IRQ	InterRupt reQuest
AGC	Automatic Gain Control	LE	Loading End
AL	ALways	LED	Light Emitting Diode
ALC	Automatic Level Control	LIM	Limiter
A-mode	Audio-mode	LM	Loading Motor
A.mute	Audio mute	LM-EMG	Loading Motor-EMerGency
APC	Automatic Phase Control	LSI	Large Scale Intergrated IC
ASB	ASsembly (AECrec)	MESECAM	Middle East SECAM
BEF	Band Elimination Filter	MM	Mono Multivibrator
BGP	Burst Gate Pulse	NTSC	NTTSC color system
BPF	Band Pass Filter	NVRAM	Non Volatile Random Access Memory
BU	Back Up	OPE-PCB	OPERation Printed Circuit Board
B/W	Black/White (mode)	OSC	OSCillator
C	Capacitor or Condenser, Chroma	PAL	PAL color system
C.K	Color Killer	PB	Play Back
CM	Capstan Motor	PG	Pulse Generator
C MOS	Complementary Metal Oxide Semicon- ductor	PLL	Phase Locked Loop
CPU	Central Processing Unit (IC)	P/V	Phase to Voltage(converter)
CR	Capacitor and Resistor (oscillator)	PWM	Pulse Width Modulation
CUE.REV	CUE Review (input)	RCK	Reference Clock
C.SYNC	Composite Sync.	RDY	ReaDY
CTL	ConTroL	REC	RECORD
DET	DETECTOR	REF	REFerence
DEMO	DEMODulator	REV	REVerse
DIFF	DIFFerential	ROM	Read Only Memory
DIP	Dual Inline Package	SCK	Serial Clock
DM	Drum Motor	SD	Secam Detector
DMM	Digital Mono-Multivibrator	SI	Serial In
DOC	DropOut Compensator	SLP	Super-Long Play
EE	Electronic to Electronic	SO	Serial Out
EP	Extra long Play	SP	Standard Play
fCK	frequency of Clock	STRB	STRoBe
FF	Flip-Flop	SW	SWitch
FF	Fast Forward (mode)	SWP	SWitching Pulse
FG	Frequency Generator	SYS	SYStem
fH	Horizontal frequency	T.mute	Tuner mute
F OFF	Function OFF	TRMM	Tracking Mono multivibrator
F ON	Function ON	TRP	Take up Reel Pulse
F/R	Forward / Reverse	TV	Television
fRCK	frequency of Reference Clock	UNR	UNRegulated
fSC	frequency of Sub Carrier	V	vertical
F/V	Frequency to Voltage (converter)	VCO	Voltage Controlled Oscillator
FWD	ForWarD	VH	VHF High Band
H	length of one Horizontal line	VIF	Video Intermediate Frequency
HPF	High Pass Filter	VL	VHF Low Band
H-SYNC	Horizontal SYNChronization	VOW	Video OnWard
IDL-5V	IDLing 5V (voltage)	VP	Vertical pulse (Quasi Vsync pulse)
IMS	Interactive Monitor System	VPS	Video Program identification system
INST	INSerT (record)	VT	Tuning Voltage
INT	INTerrupt	U	UHF (Ultra High Frequency)

AKAI

MODEL **AT-25/L**

SCHEMATIC DIAGRAM AND PC BOARDS

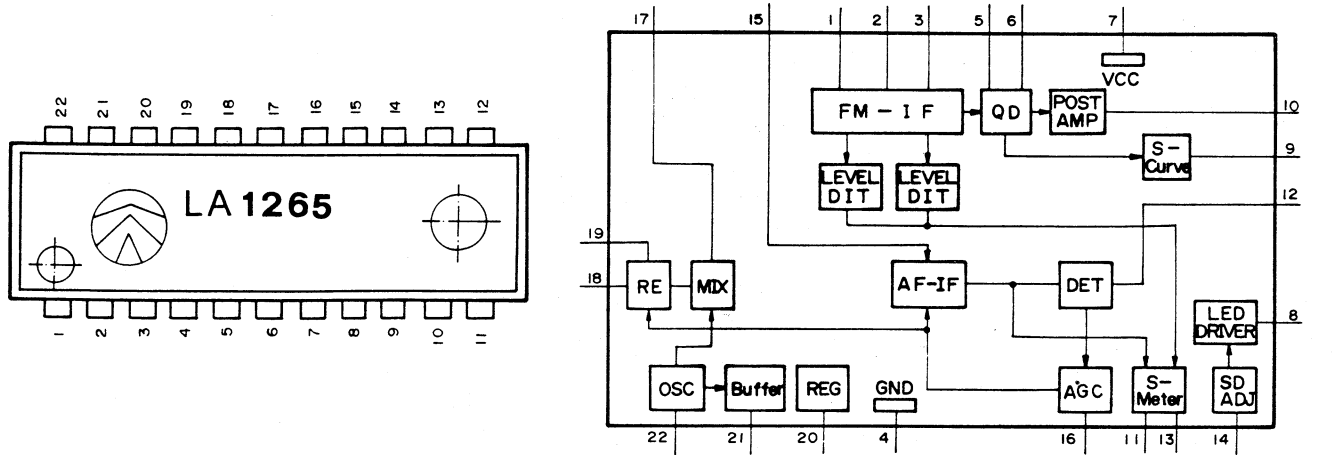
TABLE OF CONTENTS

1. ICs	2
2. BLOCK DIAGRAM	3
3. AT-25 MAIN PC BOARD SCHEMATIC DIAGRAM.....	4
4. MAIN PC BOARD, POWER SUPPLY PC BOARD AND LED PC BOARD.....	5
5. AT-25/L MAIN PC BOARD SCHEMATIC DIAGRAM	6
6. MAIN PC BOARD, POWER SUPPLY PC BOARD AND LED PC BOARD.....	7
7. FRONT-END SCHEMATIC DIAGRAM.....	8

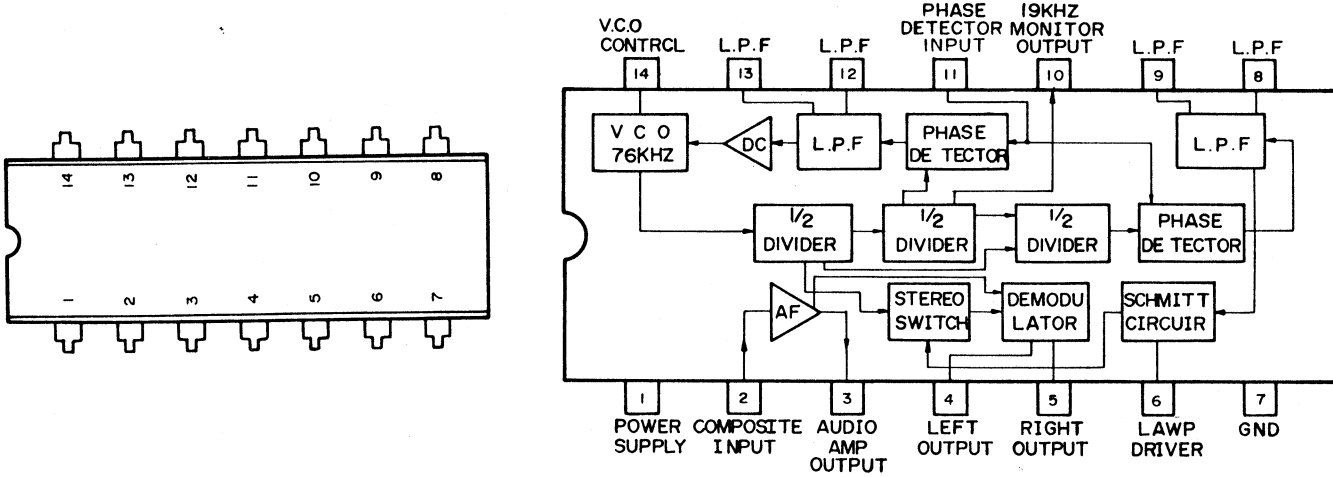
A3048 (SYSTEM CONTROL MI-COM)

Pin	PORT NAME	DESCRIPTION
1	K2	Key scan input from Key matrix
2	K3	
3	SENS	Power ON detect input
5	STSIG	IF signal input or muting signal input for detecting the station during auto-tuning. (active L)
6	STIN	Auto tuning stop input from PLL IC (active L)
7	DATA	Transfer data to PLL IC
8	CL	Clock output to PLL IC (f)
9	CE	Chip enable output for selecting PLL IC (active H)
10	STRQ	Stop request output to PLL IC for IF amplifier function and IF frequency count down (active H)
14	MONO	Forced MONO control output
15	EDO	150 m sec output when Keys depressed (except MEMORY KEY) NO output when from Back-up mode.
17	ME9-16	Indicator output for 9~16ch Preset memory rewriting
18	AMUTE	Audio mute output when band changed, tuning up/down, from back-up mode and preset memory reading.
19	RES	Reset input
20	TEST	Connect to GND
21	VSS	Connect to GND
22	OSC1	Oscillator for clock
23	OSC2	
24	D0	Digit Data output for Indicator and Data for Key scan (active H)
25	D1	
26	D2	
27	D3	
28	a	Segment output for Indicator
29	b	
30	c	
31	d	
32	e	
33	f	
34	g	Segment output for Indicator
35	h	
36	D4	Digit output for Indicator and Key scanning (active H)
37	D5	
38	HOLD	Internal RAM hold input (active L)
39	INT	Interrupt request input
40	VDD	Power input (+5V)
41	K0	Key scan input from Key matrix
42	K1	

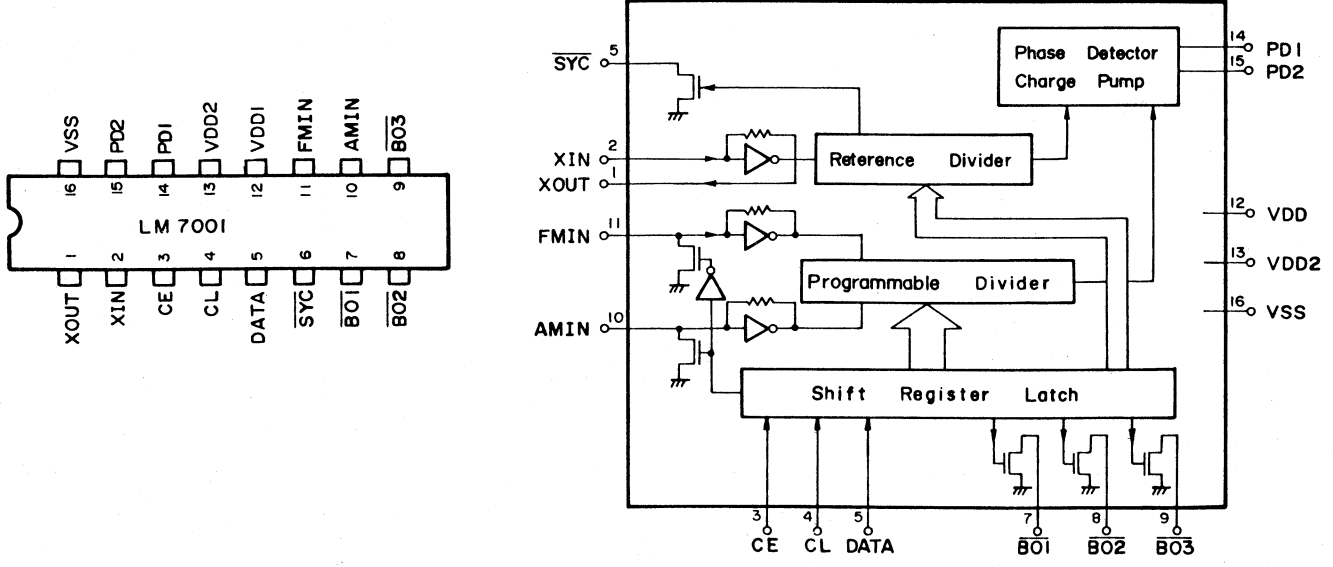
LA1265 (AM/FM DETECTOR)



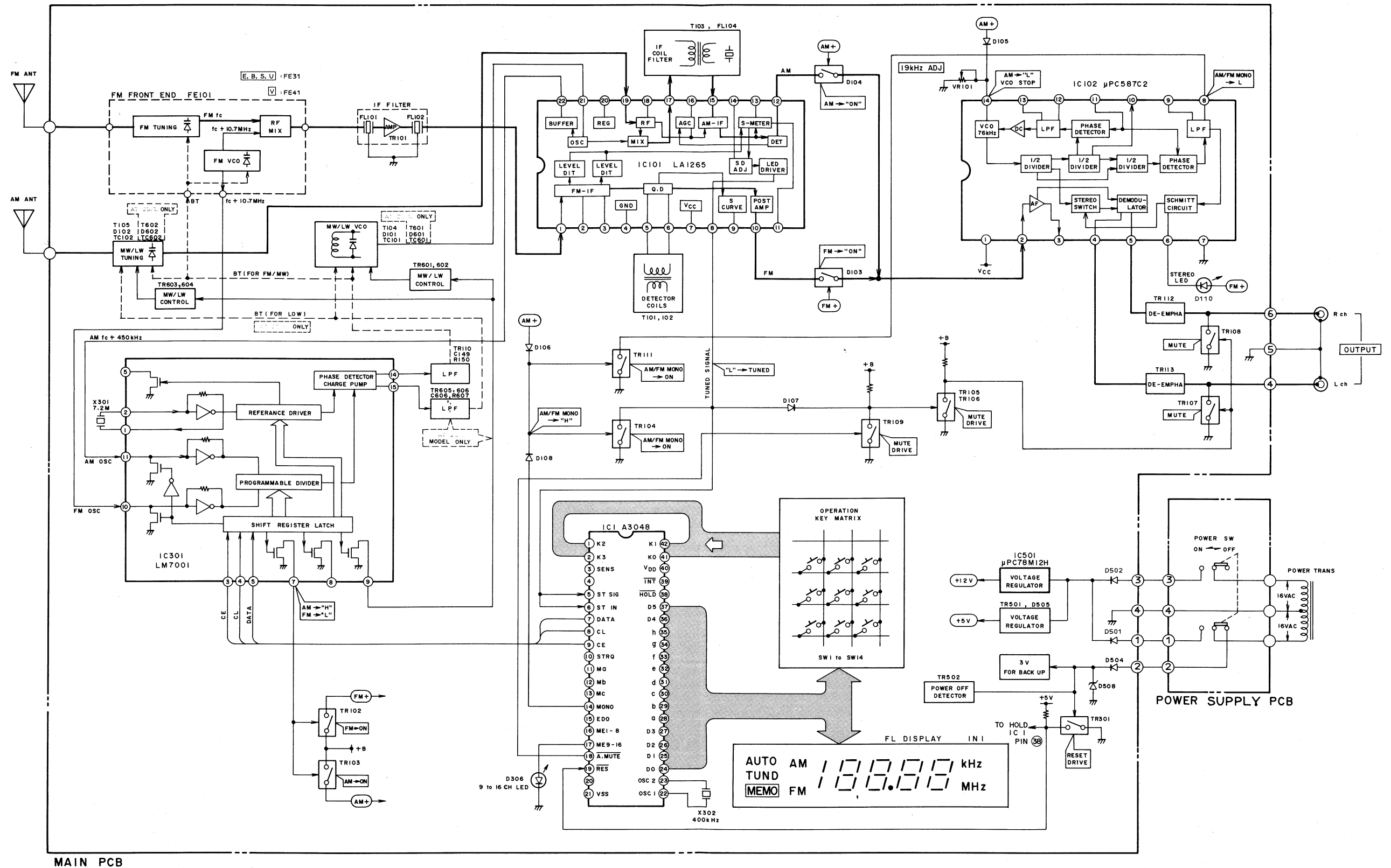
LM7001 (PLL SYNTHESIZER)



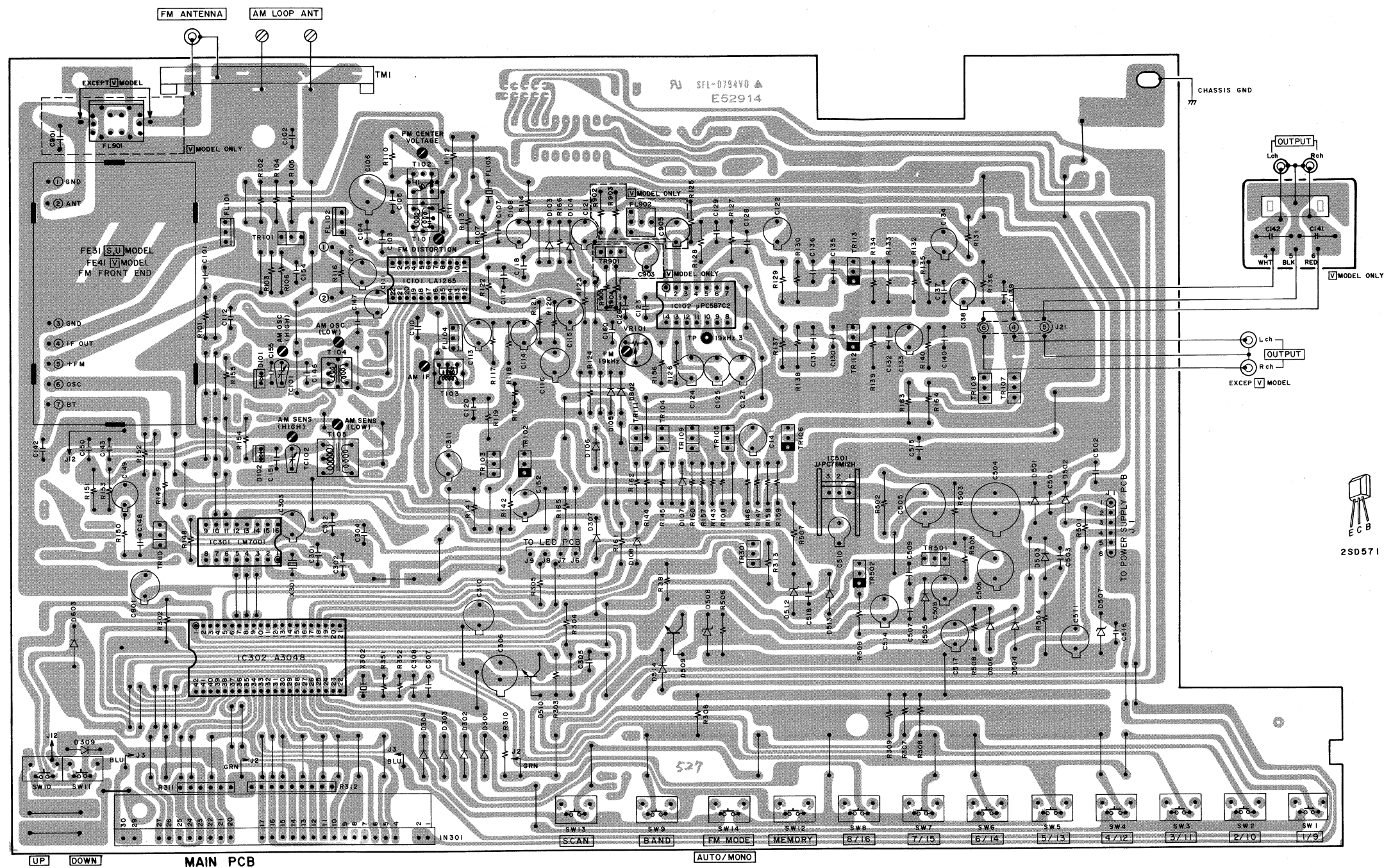
μPC587C2 (FM MPX)



AT-25/L



AT-25/L
BLOCK DIAGRAM
NO. 870714F

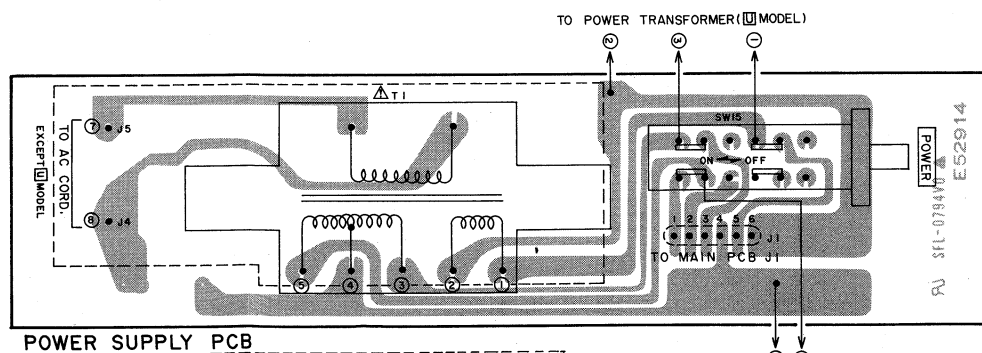


LOCATION OF COMPONENT

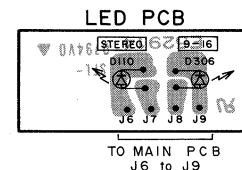
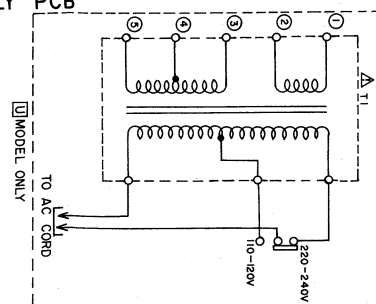
ICs	TRs	
IC101 C2	TR101 B2	TR109 D3
IC102 D2	TR102 C3	TR110 A3
IC301 B3	TR103 C3	TR111 D3
IC302 B4	TR104 D3	TR112 E2
IC501 E3	TR105 E3	TR113 E2
	TR106 E3	TR301 E3
	TR107 F2	TR501 F3
	TR108 F2	TR502 E4

= PNP TRANSISTOR
 = NPN TRANSISTOR

TR101 2SC710(D)
 TR102, TR106, TR112,
 TR113, TR502 2SA1115 (E, F)
 TR103, TR104, TR105,
 TR107, TR108, TR109,
 TR110, TR111, TR301 ... 2SC2603 (E, F)
 TR501 2SD571 (L, K)



POWER SUPPLY PCB



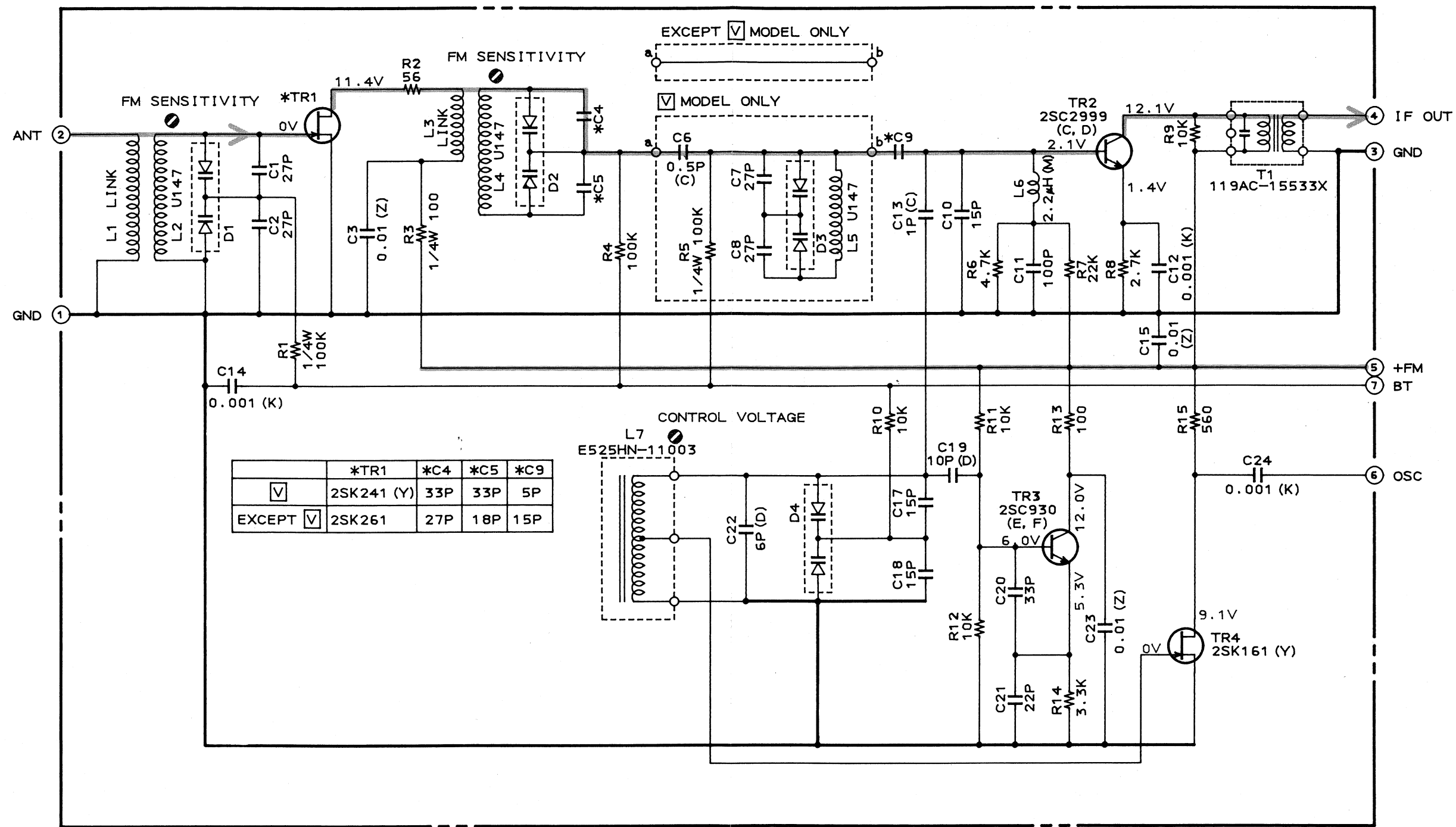
LED PCB

2SD571

2SA1115
 2SC2603

2SC710

WARNING: INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
 AVERTISSEMENT: INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.



FE31 ☐ E, B, S, U MODEL FE41 ☒ MODEL

INDICATED VOLTAGES ARE MEASURED IN FM MODE.

———— B (POWER SUPPLY) LINE
 ———— FM SIGNAL LINE

NOTE
 UNLESS OTHERWISE SPECIFIED
 ALL RESISTORS IN OHMS 1/6W(J)
 ALL CAPACITORS IN μ F 50W(J)

AT-25/L
 FRONT END
 SCHEMATIC DIAGRAM
 NO.3-3 AC01603M